REMARKS

Claims 18-20 have been canceled.

New claims 23-25 have been added. The new claims are intended to clarify canceled claims 18-20. (See claim correspondence table below.) Applicants will respond, in the remarks below, to the rejections of claims 18-20 in the present Office Action as they pertain to the new claims.

Claims 23-25 are fully supported by the specification and no new matter has been added by these claims. Support for each of these new claims can be found in the specification and claims as originally filed. In particular, support for new claim 23 may be found, for example, in the specification at p. 11, lines 17-20. Support for new claim 24 may be found, for example, in the specification at p. 21, lines 14-17. Support for new claim 25 may be found, for example, in original claim 18. Entry of these new claims is therefore respectfully requested.

Original Claim No.	New Claim No.
18	25
19	23
20	24

Applicants reserve the right to prosecute non-elected subject matter in subsequent divisional applications.

Written description rejections of claims 18-20 under 35 U.S.C. § 112, first paragraph

Claims 18-20 (new claims 25, 23, and 24, respectively) are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the claimed invention, at the time the application was filed. Applicants respectfully traverse for at least the reasons already made of record in Applicants' Brief on Appeal filed on May 6, 2003 and those below.

As stated in Section 2163.02 of the Manual of Patent Examining Procedure "one must

define a compound by 'whatever characteristics sufficiently distinguish it.'" Applicants submit that with the disclosure of the sequences of SEQ ID NO:1 and SEQ ID NO:2, the recitation of "naturally occurring" and "at least 90% sequence identity" in the claims, and the routine use of sequence comparison analysis methods by persons of skill in the art, the claimed polynucleotide variants are adequately described. Persons of skill in the art routinely use percent identity of one sequence to another to describe a sequence. Applicants submit that the percent identity limitation coupled with the limitation that the variant be "naturally occurring" would serve to adequately describe to one of skill in the art the claimed variants so as to sufficiently distinguish them from other unrelated sequences

Applicants respectfully emphasize that the claimed variant polynucleotides are "naturally occurring" and as such, the scope of the claimed variants in narrowed to a finite set, rather than all possible variants that could be produced using recombinant DNA techniques. The specification describes naturally occurring variants in several places. A "variant" is described as "an amino acid sequence that is altered by one or more amino acids" (specification, p. 5, lines 3-4). "Alterations" in polynucleotide sequence are described as "any alteration in the sequence of polynucleotides encoding HPYP including deletions, insertions, and point mutations" (specification, p. 9, lines 28-29). An "allelic sequence" is described as "an alternative form of the gene which may result from at least one mutation in the nucleic acid sequence" (specification, p. 13, lines 7-14). These descriptions underscore that the claimed polynucleotide variants are limited to "*naturally occurring*" polynucleotide variants and provide guidance as to what types of variants would be expected.

The scope of the of the claimed variants is further limited by the recitation in the claims of a polynucleotide or encoding a polypeptide "having at least 90% sequence identity to the sequence of SEQ ID NO:1." The specification discloses the sequences of SEQ ID NO:1 and SEQ ID NO:2 (specification, pp. 47-50). The specification also provides guidance in determining percent identity (specification, p. 10, lines 11-27). These and other methods are well known in the art. One of skill in the art would therefore readily recognize a polynucleotide variant having 90% identity to SEQ ID NO:2 or to a polynucleotide encoding a polypeptide having 90% identity to SEQ ID NO:1.

With regard to the genus of probes comprising at least 60 contiguous nucleotides, the

Examiner alleges that since only one species (SEQ ID NO:2) is described explicitly, there is not adequate written description of the genus. Applicants respectfully traverse for at least the following reasons. Attention is drawn to the Patent and Trademark Office's own "Guidelines for Examination of Patent Applications Under the 35 U.S.C. Sec. 112, para. 1", published January 5, 2001, which provide that :

> "An applicant may also show that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics which provide evidence that applicant was in possession of the claimed invention, i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics. What is conventional or well known to one of ordinary skill in the art need not be disclosed in detail. If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, *even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met.*" (emphasis added; footnotes omitted)

Methods and software for designing DNA probes are well known in the art and are used routinely. With the disclosure of SEQ ID NO:1 and SEQ ID NO:2, one of skill in the art would readily identify a probe comprising at least 60 contiguous nucleotides comprising a sequence complementary to the target polynucleotide of claim 23. A listing of each and every probe would be tantamount to explicitly describing every nuance of the claim and is, according to the plain language of the Guidelines, not required to meet the written description requirement.

Withdrawal of the written description rejections under 35 U.S.C. § 112, first paragraph is therefore respectfully requested.

Response to Examiner's Response to Arguments

The Examiner has found Applicants' arguments in the Brief on Appeal, filed May 9, 2003, regarding the written description rejections, to be not persuasive. Applicants respectfully traverse for at least the reasons already made of record and those below.

Case law supports the assertion that functional characterization alone is insufficient to satisfy the written description requirement (e.g., *Fiers v. Revel*, 25 USPQ2d 1601 (Fed. Cir. 1993); *University of California v. Eli Lilly and Co.*, 43 USPQ2d 1398

(Fed. Cir. 1997)). However there is, as yet, no case law setting forth the minimum description necessary to meet the written description requirement. The plain language of the written description requirement in the Examination Guidelines describes the minimum requirements in the alternative, one of which is pure structural characterization. Thus, a recitation of structure in the claim satisfies the plain language of the written description requirement in the Examination Guidelines but apparently not the Patent Office's current *interpretation* of these guidelines. Applicants submit that the definitive resolution of this issue awaits action by the CAFC.

Rejections under 35 U.S.C. § 103

Claims 18 and 20 (new claims 25 and 24, respectively) are rejected under 35 U.S.C. § 103 as allegedly being obvious to try in light of two cited human ESTs. Applicants respectfully traverse for at least the following reasons.

First and foremost, this rejection is improper because the Examiner has failed to cite any references which, either alone or in combination, would render obvious the claimed methods, i.e., methods of detecting a specific, particular, patentable sequence of claim 23. Even assuming, *arguendo*, that it might be obvious to try to detect an unknown full length sequence based on the existence of partial EST fragments in the prior art,

> ... [o]bvious to try" has long been held not to constitute obviousness. *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1680-81 (Fed. Cir. 1988). A general incentive does not make obvious a particular result, nor does the existence of techniques by which those efforts can be carried out." *In re Deuel*, 34 USPQ2d 1210 (CAFC 1995).

The Examiner alleges that the method of detecting the polypeptide of SEQ ID NO:1 is obvious, because ESTs useful as probes (e.g., the cited art) were identified that could potentially be used to isolate a new, unknown, full length pyrophosphatase. However, it is respectfully pointed out that these partial sequences were NOT identified as being a part of Applicants' claimed sequence of SEQ ID NO:1, which had not yet been elucidated – in fact, the claimed sequence has been found allowable by the Examiner. What might have been obvious is the **wish to know** the full sequence that corresponded to some extent to the ESTs identified by the cited art, but none of the art of record

discloses these sequences. Moreover, while is also true that the ESTs of the cited art **might** have been useful to detect the full length sequence, they were not so used by the cited art, and in any case, the corresponding full length sequences were not known until Applicants elucidated them. Applicants do not claim a method for detecting all HPYPs. Applicants claim a method for detecting **the** HPYP of SEQ ID NO:1. The Examiner improperly construes the claim language by failing to give weight to the limitation of the preamble "said target polynucleotide having the sequence of a polynucleotide of claim 19 [23]."

As was discussed in *Pitney Bowes Inc. v. Hewlett-Packard Co.*, 51 USPQ2d 1161 (Fed. Cir 1999):

> If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is "necessary to give life, meaning, and vitality" to the claim, then the claim preamble should be construed as if in the balance of the claim. *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 480-81 (CCPA 1951); see also, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997); *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989). Indeed, when discussing the "claim" in such a circumstance, there is no meaningful distinction to be drawn between the claim preamble and the rest of the claim, for only together do they comprise the "claim".

Thus, it is clear that the Examiner cannot disregard the limitation recited in the preamble, i.e., that the product detected is a specific sequence, and that sequence is not only novel, it is unobvious itself.

Therefore, Applicants submit that the Examiner has clearly failed to establish a proper *prima facie* case of obviousness, as

1) the Examiner has failed to construe the claims properly; and
2) the skilled worker could only, at best, have hoped to detect the exact complement of a complement to the prior art ESTs, not the unknown, full length sequences.

Thus, there is no combination of the cited art that could render the claimed methods obvious; since the entire sequence of SEQ ID NO:1 was not known, there was no way that detecting that sequence, as compared to any other possible sequence of any possible length containing one of those ESTs, could be obvious. Applicants respectfully

request that these rejections be withdrawn.

CONCLUSION

In light of the above amendments and remarks, Applicants submit that the present application is fully in condition for allowance, and request that the Examiner withdraw the outstanding objections/rejections. Early notice to that effect is earnestly solicited. If the Examiner contemplates other action, or if a telephone conference would expedite allowance of the claims, Applicants invite the Examiner to contact the undersigned at the number listed below.

Applicants believe that no fee is due with this communication. However, if the USPTO determines that a fee is due, the Commissioner is hereby authorized to charge Deposit Account No. **09-0108.**

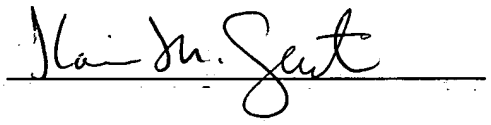
Respectfully submitted,

INCYTE CORPORATION

Date: 27 October 2003

Cathleen M. Rocco
Reg. No. 46,172
Direct Dial Telephone: (650) 845-4587

Date: 27 October 2003



Karin M. Gerstin
Reg. No. 54,119
Direct Dial Telephone: (650) 845-4889

Customer No.: 27904
3160 Porter Drive
Palo Alto, California 94304
Phone: (650) 855-0555
Fax: (650) 849-8886